APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,391	01/07/2002	Stefan Schabel	Q67746	4486

7590 03/21/2006	**EXAMINER**
SUGHRUE MION, PLLC	DSOUZA, JOSEPH FRANCIS A
2100 Pennsylvania Avenue, NW	

ART UNIT	PAPER NUMBER
2611	

Washington, DC 20037-3213

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/036,391	SCHABEL ET AL.
	Examiner	**Art Unit**	
	Adolf DSouza	2637	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _07 January 2002_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-6_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-6_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _4/8/2002_.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Response to Arguments

1.   Applicant's arguments, "Haykin fails to teach a 0.2 to 0.4% can be achieved by adjusting the bandpass filter for a given bandpass range", filed 12/15/2005, with respect to the rejection(s) of claim 1 under 35 U.S.C 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Hansryd (A Simple, Low Timing Jitter, Sub-Multiple Clock Recovery Scheme, Sept. 20-24, 1998, European Conference on Optical Communication, pages 471-472) in view of Paine et al. (US 3,626,298) and further in view of Andrews et al. (US 4715049).

Priority

1.   Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Specification

2.   The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following change is suggested in the title: Process for Digital Message

Transmission in a Packet Mode and a Receiver for Reception of Optical Data Packets.

A "receiver for transmission".. is changed to "receiver for reception..."

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4.   Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply

with the written description requirement. The claim(s) contains subject matter, which

was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had

possession of the claimed invention.

Regarding claims 1-2 and 6, the specification simply states that a bandwidth of 0.2 - 0.4

percent or 0.3 percent of the bit timing is used. No adequate explanation is given of how

one arrives at these numbers. For example, why is 0.2 used and not 0.18 or 0.22? The

significance of what these numbers mean should be explained in relation to how they

relate to the transient recovery and decay times of the bandpass filter.

Claims 3-5 are rejected since they are dependent on a rejected claim.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6.   Prior to rejection of claims, the examiner would like to bring to the applicant's

attention that there is no specific description of the function of the discriminator in the

specification. Therefore, in the absence of such a description, the examiner has

interpreted the discriminator in the broadest possible terms and claims are analyzed in

light of that broad interpretation.

7.   Claims 1-2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Hansryd (A Simple, Low Timing Jitter, Sub-Multiple Clock Recovery Scheme, Sept.

20-24, 1998, European Conference on Optical Communication, pages 471-472) in view

of Paine et al. (US 3,626,298) and further in view of Andrews et al. (US 4715049).

Regarding claim 1, Hansryd discloses process for digital message transmission in a

packet mode (page 471, section "Introduction", 1st 4 lines; wherein the packet mode is

interpreted as the time division multiplexing scheme), where transmitted signals are

sampled at an end of a transmission link by means of a device for timing recovery (Fig.

2, page 471, section "Experimental Details") and are then further processed;

and where the signals are fed to a discriminator simultaneously via two separate paths

(Fig. 2, element "Demux"; wherein the discriminator is interpreted as the demux), a

delay path (Fig. 2, fiber delay line path labeled 40 Gbits/sec; page 471, section

"Experimental Details") and a path fitted with a filter (Fig. 2, element "High-Q filter";

section "Experimental Details");

and an amplifier limiting an amplitude of an output voltage of the limiting amplifier via

which the signals are brought to a required constant level, is connected downstream of

the bandpass filter (Fig. 2, element "Limiting amplifier"; page 471, 2nd column, last line

- page 472, 1st 3 lines).

Hansryd does not disclose that the relationship between the bandwidth of the

bandpass filter and the bit rate.

In the same field of endeavor, however, Paine discloses a wideband bandpass filter

with a relative bandwidth of 0.2% to 0.4% of a bit timing of the transmitted signals is

used as the filter (column 1, lines 70-75; column 7, lines 60-67; wherein the range of

0.2% to 0.4% is interpreted as being included in the range of "down to" 0.001 percent

of the bit rate).

Therefore it would be obvious to one of ordinary skill in the art, at the time the invention was made, to use the method of having the bandwidth of the filter dependent on the bit rate, as taught by Paine, in the system of Hansryd because this would allow the bandwidth to optimized for the input bit rate, thereby reducing the noise power that is allowed through.

Hansryd does not disclose the relationship between the transient recovery time, the delay time and the decay times.

In the same field of endeavor, however, Andrews discloses transient recovery time is less than a time by which the signals are delayed on the delay path, and the time by which signals are delayed on the delay path is less than a decay time of the wideband bandpass filter (Fig. 1. element 26; column 3, line 62 – column 4, line 33; wherein the time by which the signals are delayed on the delay path in relation to the transient and decay times is interpreted as being the delay set by delay element 26).

Therefore it would be obvious to one of ordinary skill in the art, at the time the invention was made, to use the method, as taught by Andrews, in the system of Hansryd because this would allow the delay to be adjusted so that the signals in both paths are synchronized.

Claim 2 is similarly analyzed as the limitation in claim 1, that the bandwidth be 0.2% –

0.4% of the bit rate.

As to claims 13-22, claims 13-22 are apparatus claims corresponding to method claims

1-10 and recite substantially very similar limitations and therefore are similarly analyzed

as method claims 1-10 above.

Regarding claim 6, Hansryd discloses an optical telecommunication system for the

transmission of optical data packets (page 471, left column, 1st 3 lines; wherein the

packet mode is interpreted as the time division multiplexing scheme).

All other limitations of claim 6 are apparatus limitations corresponding to method

limitations in claim 1 and recite substantially very similar limitations and therefore are

similarly analyzed as method claim 1 above.

8.   Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hansryd

(A Simple, Low Timing Jitter, Sub-Multiple Clock Recovery Scheme, Sept. 20-24, 1998,

European Conference on Optical Communication, pages 471-472) in view of Paine et

al. (US 3,626,298) and further in view of Andrews et al. (US 4715049) and Haykin

(Communication Systems, 1978,John Wiley & Sons, pages 89-93).

Regarding claim 3, Hansryd does not disclose that the bandpass filter can be implemented by in-phase and quadrature paths comprising low pass filters.

In the same field of endeavor, however, Haykin discloses a circuit with two parallel paths in which each is an identical low-pass filter arranged between two analogue multipliers, is used as the bandpass filter (Figs. 1.48 (a) and (b); page 89, section 1.15; wherein the output of (a) is fed to the input of (b) to give the desired configuration); and a local timing is applied to the multipliers of one of the two parallel paths, while the local timing shifted by 90.degree. is applied to the multipliers of the other one of the two parallel paths (Figs. 1.48 (a) and (b); page 89, section 1.15; wherein the local timing is interpreted as the "cos" signal and the local timing phase shifted by 90-degrees is interpreted as the "sin" signal).

Therefore it would be obvious to one of ordinary skill in the art, at the time the invention was made, to use the method, as taught by Haykin, in the system of Hansryd because this would allow the bandpass filter to be implemented by in-phase and quadrature paths that use low pass filters, thereby simplifying and cost reducing the implementation.

9.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hansryd (A Simple, Low Timing Jitter, Sub-Multiple Clock Recovery Scheme, Sept. 20-24, 1998, European Conference on Optical Communication, pages 471-472) in view of Paine et

al. (US 3,626,298) and further in view of Andrews et al. (US 4715049), Haykin

(Communication Systems, 1978,John Wiley & Sons, pages 89-93) and Malik et al. (US

5,577,056).

Regarding claim 4, Hansryd does not disclose that a sample-and-hold element is placed

before the low-pass filters.

In the same field of endeavor, however, Malik discloses a system that utilizes a sample-

and-hold circuit in the two parallel paths of a timing recovery scheme (Fig. 2, elements

44 and 45; column 4, lines 57-59; wherein the sample-and-hold elements are

interpreted as the A/D converters).

Therefore it would be obvious to one of ordinary skill in the art, at the time the invention

was made, to use the method, as taught by Malik, in the system of Hansryd because

this would allow digital processing of the elements of the bandpass filter, thereby

improving system reliability, since the filter parameters wouldn't be subject to

temperature and time fluctuations and also the two paths could be more precisely

matched.

10.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hansryd

(A Simple, Low Timing Jitter, Sub-Multiple Clock Recovery Scheme, Sept. 20-24, 1998,

European Conference on Optical Communication, pages 471-472) in view of Paine et

al. (US 3,626,298) and further in view of Andrews et al. (US 4715049) and Pachynski
(US 4,025,720).

Regarding claim 5, Hansryd does not disclose converting NRZ code to RZ code.

In the same field of endeavor, however, Pachynski discloses coding of the signals prior
to the bandpass filter is converted from an NRZ code to an RZ code (column 5, lines 27-
34; column 7, lines 52-65).

Therefore it would be obvious to one of ordinary skill in the art, at the time the invention
was made, to use the method, as taught by Pachynski, in the system of Hansryd
because this would produce a spectral component for clock recovery.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's
disclosure.
The following patents cited to further show the state of the art with respect to clock
recovery in general:

Bench et al. (US 4,276,651) discloses clock circuitry for a data communication
system.

Cortese (US 5,138,633) discloses method and apparatus for adaptively retiming and regenerating digital pulse signals.

Meline (US 5,047,735) discloses RZ clock recovery circuit with positive feedback.

Pearson (US 5276712) discloses method and apparatus for clock recovery in digital communication systems.

Thomas et al. (US 4,996,444) discloses a clock recovery circuit.

Viola et al (US 4,737,970) discloses a clock recovery circuit using a cavity resonator.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adolf DSouza whose telephone number is (571)-272-1043. The examiner can normally be reached on Monday – Friday (730 – 430 EST).
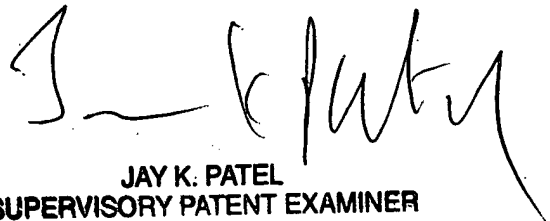
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour, can be reached on (571)-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

AD

Adolf DSouza
Examiner
Art Unit 2637

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SUPERVISORY PATENT EXAMINER